Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1. (currently amended). In a switching system having a plurality of ~~n~~ ports with each of the ports being coupled to a local area network via a Hub, the connectivity between the inputs and outputs of the plurality of ~~n~~ ports forming first and second matrixes of cross points, each cross point in the first matrix establishing a unilateral communication path from a source port to a destination port, each cross point in the second matrix providing a complementary connection from the destination port to the source point, a method of establishing a transmission operation from a first Hub ~~(i)~~ coupled to a first source port ~~(i)~~ to a second Hub ~~(j)~~ coupled to a first destination port ~~(j)~~, the method comprising the steps of:

a) activating a first cross point ~~B(j, i)~~ in the second matrix to establish a first unilateral path from the first destination port to the first source port;

b) detecting, via the first unilateral path connection from the first destination port ~~(j)~~ to the first source port ~~(i)~~, whether the second Hub ~~(j)~~ is idle; and

c) generating a collision signal, at the first source port ~~(i)~~ when the second Hub ~~(j)~~ is not idle.

Claim 2. (currently amended). The method of claim 1, further comprising the step of:

d) activating a second cross point ~~A(i, j)~~ to establish a second unilateral path connection from the first source port ~~(i)~~ to the first destination port ~~(j)~~ when the second Hub ~~(j)~~ is idle.

Claim 3. (currently amended). The method of claim 2, further comprising the step of:

e) transmitting the packet from the first source port ~~(i)~~ to the second Hub ~~(j)~~ through the second unilateral path.

Claim 4. (currently amended). The method of claim 1 wherein step a) further comprises employing a control circuit to activate the first cross point ~~B(j, i)~~ in the second matrix.

Claim 5. (currently amended). The method of claim 2 wherein

step a) further comprises employing a control circuit to activate the first cross point ~~B(j, i)~~ in the second matrix; and

step d) further comprises employing the control circuit to activate the second cross point ~~A(i, j)~~ in the first matrix.

Claim 6. (currently amended). The method of claim 4, wherein step a) further comprises:

providing to the control circuit a destination address for the first destination port ~~(j)~~;

comparing the provided destination address with a built-in destination address within

the control circuit; and

activating the first cross point ~~B(j, i)~~ when the provided destination address matches the built-in destination addresses.

Claim 7. (currently amended). In a switching system having ~~n~~ a plurality of ports with each of the ports being coupled to a local area network via a Hub, an arrangement for establishing connectivity between the inputs and outputs of the ~~n~~ plurality of ports, comprising:

a) a first matrix of ~~n x n~~ cross points operable to connect select pairs of the plurality of ports~~, each first matrix cross point establishing a unilateral path between two of the n ports~~;

b) a second matrix of ~~n x n~~ cross points operable to connect select pairs of the plurality of ports~~, each first matrix cross point establishing a unilateral path between two of the n ports~~;

c) a control circuit associated with a first cross point of the first matrix and a complementary cross point of the second matrix, the first cross point operable to establish a first unilateral path from a first source port ~~(i)~~ to a first ~~the~~ destination port ~~(j)~~, the complementary ~~second~~ cross point operable to establish a second unilateral path from the first destination port ~~(j)~~ to the first source port ~~(i)~~.

Claim 8. (currently amended). The arrangement of claim 7 further comprising a port interface circuit coupled to the first source port ~~(i)~~, the port interface operable to:

cause the control circuit to cause the complentary cross point to establish the second

unilateral path from the first destination port ~~(j)~~ to the first source port ~~(i)~~; and

monitor the first destination port ~~(j)~~ to determine if a first Hub ~~(j)~~ coupled to the first destination port ~~(j)~~ is idle when the complementary cross point has established the second unilateral path from the first destination port ~~(j)~~ to the first source port ~~(i)~~.

Claim 9. (currently amended). The arrangement of claim 8, wherein the port interface circuit is further operable to cause the control circuit to cause the first cross point to establish the first unilateral path from the first source port ~~(i) from~~ to the first destination port ~~(j)~~ if the first Hub ~~(j)~~ is determined to be idle.

Claim 10. (currently amended). The arrangement of claim 7 wherein each of the ~~n~~ plurality of ports includes a port transmit line defining a row in the first matrix and a port receive line defining a column in the first matrix.

Claim 11. (currently amended). The arrangement of claim 7 wherein:

the second matrix comprises ~~n~~ a number of row lines and ~~n~~ a same number of column lines;

each second matrix row line is coupled to a first matrix column line; and

each second matrix column line is coupled to a first matrix row line.

Claim 12. (currently amended). The arrangement of claim 10 wherein the control circuit is operably coupled to the port transmit line of the first source port ~~(i)~~.

Claim 13. (currently amended). The arrangement of claim 12 wherein the control circuit is operable to receive address information over the port transmit line of the first source port ~~(i)~~, and wherein the control circuit is operable to cause the second cross point to establish the second unilateral path from the first destination port ~~(j)~~ to the first source port ~~(i)~~ responsive to receiving the address information.

Claim 14. (currently amended). The arrangement of claim 12 wherein the control circuit is further operable to receive operational information over the port transmit line of the first source port ~~(i)~~, and wherein the control circuit is operable to cause the complentary cross point to establish the second unilateral path from the first destination port ~~(j)~~ to the first source port ~~(i)~~ responsive to receiving the address information and the operational information.

Claim 15. (currently amended). The arrangement of claim 13 wherein the control circuit is further operable to receive additional information over the port transmit line of the first source port ~~(i)~~, and wherein the control circuit is operable to cause the first cross point to establish the first unilateral path from the first source port ~~(i)~~ to the first destination port ~~(j)~~ responsive to receiving the additional information.

Claim 16. (original). The arrangement of claim 15 wherein the additional information includes additional address information.

Claim 17. (original). The arrangement of claim 16 wherein the additional information includes additional operational information.

Claim 18. (currently amended). In a switching system having n ports with each of the ports being coupled to a local area network via a Hub, a switching arrangement comprising:

a) a first matrix of cross points, each cross point selectively and controllably connecting one of n port transmit lines to one of n port receive lines, thereby establishing a unilateral communication path from a source port to a destination port; and

b) a plurality of cross point control circuits, each cross point control circuit operably coupled to controllably activate an associated cross point of the first matrix, the associated cross point connecting a select port transmit line and a select port receive line, the cross point control circuit further operably coupled to the select port transmit line to receive cross point control information therefrom, the cross point control circuit operable to activate the associated cross point responsive to cross point control information therefrom.

Claim 19. (original). The switching arrangement of claim 18, further comprising a multiplexer having an output coupled to the select port transmit line, a first input connected to a source of cross point control information, and a second input connected to a source of packet data to be transmitted via the associated cross point.

Claim 20. (original). The switching arrangement of claim 18, a first input connected to a source of cross point control information, and a second input connected to a source of packet data, and a third input connected to a source of delayed packet data.